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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,907	07/03/2003	Jovan Jevtic	071469-0303359	5574
909	7590	09/21/2004	EXAMINER	
PILLSBURY WINTHROP, LLP			DEB, ANJAN K	
P.O. BOX 10500			ART UNIT	
MCLEAN, VA 22102			PAPER NUMBER	
			2858	

DATE MAILED: 09/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/611,907	Applicant(s) JEVTIC ET AL.	
	Examiner Anjan K Deb	Art Unit 2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>07/03/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4, 6, 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Schneider (US 6,737,871 B1).

Re claim 1, Schneider discloses voltage probe (sensor 102) comprising a transmission line having an inner conductor 114 (shield), and an outer conductor 104 (first plate), an electrode 108 (second plate), spaced apart from the outer conductor 104 (first plate) and a dielectric 106, disposed between the electrode 108 and the outer conductor 104, adjacent an inner surface of the outer conductor 104.

Re claim 2, Schneider discloses voltage probe comprising a lead 142 in electrical communication with the electrode 108, the lead passing through an opening through each of the dielectric and the outer conductor (Fig. 1).

Re claim 3, Schneider discloses voltage probe wherein each of the outer conductor and the electrode are curved (Fig. 1).

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Re claim 4, Schneider discloses voltage probe wherein the dielectric 106 is attached to the electrode 108 and the inner surface of the outer conductor 104 (Fig. 1).

Re claim 6, Schneider discloses voltage probe wherein the electrode 108 and the dielectric are each configured as sections of cylindrical surfaces (Fig. 1).

3. Claims 18, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller (US 5,325,019).

Re claim 18, Miller discloses (Fig. 2) method of controlling a plasma process, comprising providing an input radio frequency signal (RF POWER) to produce a plasma in a plasma generator 12, the radio frequency signal traveling in a transmission line 13 having an inner conductor and an outer conductor (coaxial cable), providing an electrode 17 separated from the outer conductor, providing a dielectric (insulation) adjacent the outer conductor (column 4 lines 39-45), receiving a signal from the electrode indicating voltage of the radio frequency signal (column 4 lines 56-61) and adjusting the input signal (electrical excitation level)(see abstract lines 4-9) in response to the received signal from the electrode (column 2 lines 12-17).

Re claim 19, Miller discloses method of controlling a plasma process further comprising measuring a current of radio frequency signal, and adjusting the input signal (electrical excitation level) in response to the measured current (see abstract lines 4-9, and column 2 lines 12-17).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 7-8, 13, 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Schneider (US 6,737,871 B1) in view of Miller (US 5,325,019).

Re claims 7-8, 13, 15-16 Schneider discloses all of the claimed limitations as set forth above except current probe.

Miller discloses current probe for measuring current in plasma process (column 4 lines 45-52).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Schneider by adding a current probe disclosed by Schneider for measuring current for controlling the power input to plasma process.

Re claim 8, Schneider does not disclose current probe is positioned within a distance less than 3% of signal wavelength.

Miller discloses placing current probe proximate conductor, broadly interpreted as placing the current probe as close as possible to conductor carrying the signal to be measured for maximum coupling (column 4 lines 45-52).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Schneider by adding placing current probe as close as possible to conductor carrying the signal to be measured for achieving maximum field coupling.

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Re claims 10-12, Schneider does not disclose voltage probe comprising a second electrode.

Miller discloses pair of electrodes (first and second electrodes) adjacent a conductor carrying a signal to be measured by capacitive coupling (column 4 lines 39-45).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify Schneider by adding pair of electrodes disclosed by Miller for measuring voltage by capacitive coupling.

6. Claims 9, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US 6,737,871 B1) in view of Miller (US 5,325,019) and further in view of Tarzwell (US 5,982,187).

Re claims 9,17 Schneider does not disclose electrode is small compared to one-fourth of signal wavelength.

Tarzwell discloses probe less than one tenth of a wavelength long to minimize problems with discontinuities and reflections (column 1 lines 50-56).

At the time of the invention it would have been obvious for one of ordinary skill in the art to modify the combination system of Schneider as modified by Miller by adding electrode having a length smaller than one-fourth of signal wavelength as disclosed by Tarzwell so as to minimize inductive couplings causing discontinuities and reflections along the length of probe and thus minimize loss of signal strength measured by probe.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Majidi (US 5,003,253) discloses probe for measuring high frequency signals wherein the length of an electrode is one-fourth of signal wavelength so as to minimize inductive couplings along the length of probe and thus minimize loss of signal strength measured by probe.

Williams (US 4,928,057) plasma probe comprising non-contact voltage measuring circuit by capacitive coupling.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, N. Le, can be reached at (571) 272-2233.



Anjan K. Deb

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9/17/04

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